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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/878,475	06/11/2001	Kaori Kojima	15162/03230	1997

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EXAMINER	
THOMPSON, TIMOTHY J	

ART UNIT	PAPER NUMBER
2873	

DATE MAILED: 02/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/874,475	PETROPOULOS ET AL.	
	Examin r	Art Unit	
	Timothy J Thompson	2873	

-- The MAILING DATE of this communication appears on the cover sheet with the correspond nc address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,6-8 and 11-19* is/are rejected.

7)☒ Claim(s) *4,5,9 and 10* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 September 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 3,16, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ota et al. (U.S. Patent No. 6,185,050) in view of Kato et al. (U.S. Patent No. 6,185,050).

Regarding claims 1 and 16, Ota et al. discloses an imaging lens system that forms an optical image(fig 1); and an image sensing device(col 1, 15-20), wherein said imaging lens system comprises two lens elements, each made of a homogeneous material and having a positive optical power(fig 1, r3-r4, r8-r9). Ota et al. does not specifically disclose; the imaging lens system fulfills the following condition $1.25 < L / f < 2.00$; or converts the optical image formed by said imaging lens system into an electronic signal. Regarding the optical image formed being converted into an electrical image, Kabe et al. discloses converting the optical image into an electrical signal(fig 2, 18). It would have been obvious to one skilled in the art, at the time of the invention, to use a CCD to record the optical image as shown by Kabe et al. in the lens device of Ota et al., since as shown by Kabe et al., CCD's are commonly used in lens systems for converting optical images into electrical signals so as to save the image for later retrieval. Regarding the mathematical limitation, a modified Ota et al. does not disclose

the distance from the lens closes to the image side the CCD is placed. However, Kato et al. discloses, in a zoom lens system, in with a focal length of 56 mm to placed the CCD at a distance of approximately 19.5989 from the lens surface closest to the image(table 1, assuming a linear change in distance between the wide angle position and the telephoto position). It would have been obvious to place the CCD at a distance of 33.95 mm as shown by Kabe et al., in the lens system of Ota et al., since as shown by Kabe et al., CCDs in lens systems are commonly placed at a distance of 33.95 mm when the lens system has a focal length of 35.24 mm. With the CCD placed at a distance of 33.95 mm, a modified Ota et al. in view of Kabe et al., has a L/F = 1.666.

Regarding claim 3, Ota et al. discloses each of the two lens elements(Table 1, r3-r4, r8-r9) has at least two surfaces, and wherein at least one surface of either of said two lens elements is an aspherical surface(table 1, r3).

Regarding claim 17, Ota et al. discloses is inherently portable since it is used in a compact camera(col 1, line 15).

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ota et al. (U.S. Patent No. 6,185,050) in view of Kato et al. (U.S. Patent No. 6,185,050) as applied to claim1 above, and further in view of Betensky(U.S. Patent No. 6,292,306 B1).

Regarding claim 2, a modified Ota et al. in view of Kato et al., does not disclose the two lenses are made from glass. However, Betensky discloses that lenses in a zoom lens system are made from glass(lens table). It would have been obvious to form the lenses from glass as shown by Betensky, in the lens system of a modified Ota et al.,

since as shown by Betensky, lenses are commonly made from glass being this material refracts light as well as provided the necessary rigidity for the lens to maintain its shape.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakai (U.S. Patent No. 6,236,512) as applied to claim 6 above, and further in view of Betensky(U.S. Patent No. 6,292,306 B1).

Regarding claim 7, Nakai discloses at least one surface of the lens element is an aspherical surface(table 1, r3). Naki does not disclose at least one of the lenses is made from glass. . However, Betensky discloses that lenses in a zoom lens system are made from glass(lens table). It would have been obvious to form the lenses from glass as shown by Betensky, in the lens system of a modified Nakai, since as shown by Betensky, lenses are commonly made from glass being this material refracts light as well as provided the necessary rigidity for the lens to maintain its shape.

Claims 11-15, 18, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable Okuyama et al. (U.S. Patent No. 6,144,493) in view of URYU(U.S. Patent Pub. No. 2003/0011690).

Regarding claims 11 and 18, Okuyama et al. discloses from the object side thereof an imaging lens system that forms an optical image of a subject(fig 47, r1-r11),an optical low pass filter(fig 47, surface r14 and col 38 lines 24-30); and an image sensing device that converts the optical image formed by the imaging lens system into an electronic signal comprising a plurality of pixels(fig 47, 4);wherein the optical low

pass filter has a predetermined cutoff frequency characteristic that depends on pixel pitch of the image sensing device(col 23, line 65 to col24 to line 67), wherein the image sensing device is a solid state image sensing device(col 23, lines 63-66), and wherein the optical image formed by the imaging lens system is converted by the image sensing device into an electronic signal(since a CCD is used in the camera). Okuyama et al. does not specifically disclose having a minimized aliasing noise characteristic. However, URYU discloses minimizing the noise of image as represented by the CCD(page 3, para 0039). It would have been obvious to minimize the aliasing noise characteristic as shown by URYU, in the lens system of a modified Okuyama et al., since as shown by URYU, reducing the noise of a CCD image is commonly done so as to improve the image stored.

Regarding claim 12, Okuyama et al., a modified Okuyama et al., as detailed in claim rejection 11 above, does not disclose a processor wherein the signal generated by the image sensing device undergoes predetermined digital image processing, and image compression processing by the processor, and is recorded in a memory. However, URYU discloses a processor wherein the signal generated by the image sensing device undergoes predetermined digital image processing, and image compression processing by the processor, and is recorded in a memory(page 3, para 0039). It would have been obvious to use a processor wherein the signal generated by the image sensing device undergoes predetermined digital image processing, and image compression processing by the processor, and is recorded in a memory shown by URYU, in the lens system of a modified Okuyama et al., since as shown by URYU, a

processor wherein the signal generated by the image sensing device undergoes predetermined digital image processing, and image compression processing by the processor, and is recorded in a memory is commonly done for storing the captured image.

Regarding claim 13, Okuyama et al. discloses two positive lens elements(fig 47, r4-r5, r13-r14), wherein an optical power of the first lens element is weaker than an optical power of the second lens element.

Regarding claim 14, Okuyama et al. discloses at least one of the two lens elements is formed of glass(col 28, lines 39-49).

Regarding claim 15, Okuyama et al. discloses wherein each of said two positive lens elements has two surfaces, and wherein at least one of the surfaces of one of the positive lens elements is an aspherical surface.(col 28, lines 39-49).

Regarding claim 19, Okuyama et al. discloses the device is poratable since it is used in a camera(col 1 lines 10-16).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 6 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakai (U.S. Patent No. 6,236,512).

Regarding claim 6, Nakai discloes an imaging lens system that forms an optical image(fig 1); and an image sensing device that converts the optical image formed by said imaging lens system into an electronic signal(fig 2, 7); wherein said imaging lens system has, from an object side thereof a first lens element(fig 1, L1), being a positive meniscus lens element convex to an image side; and a second lens element(fig 1, L2), being a bi-convex positive lens element.

Regarding claim 8, Nakai discloses each of the two lens elements has at least. two surfaces, and wherein at least one surface of either of said two lens elements is an aspherical surface(table 1, r3).

Allowable Subject Matter

Claims 4, 5, 9, 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. With the important features being the mathematical limitations pertaining to the backfocal length or the focal length pertaining to the specific lens groups.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy J. Thompson whose telephone number is (703) 305-0881. If the examiner can not be reached his supervisor, Georgia Epps, can be reached on (703) 308-4883.

T.J.T.

1/24/03

Georgia Epps
Supervisory Patent Examiner
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